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Colbert P.1 V1

SPOKANE COUNTY

PUBLIC WORKS DEPARTMENT
Dennis M. Scott, P.E., Director

RECEIVED
JUN 06 1990
SUPERFUND BRANCH

Carol Rushin, Chief
Superfund Site Management I
U.S. Environmental Protection Agency
Region 10
1200 Sixth Avenue
Seattle WA 98101

RE: HW- 113

June 4, 1990

Dear Ms. Rushin,

Spokane County recognizes the concerns of the EPA and Ecology pertaining to the the Domestic Well Monitoring program. The County and it's consultant (Bruce Austin) have taken aggressive steps in response to the community concerns.
First I would like to give you the Counties perspective of the matter. The Consent Decree outlines the requirements of the program.

1. The domestic well monitoring program is a continuation of the existing program currently being accomplished.

2. The program is carried out under the review of the sampling committee.

3. Changes will not be made without approval of the sampling committee and the County.

4. Any changes to the program will be submitted to Ecology and EPA for review and approval.

This policy is further addressed in a October 26, 1989 letter from Mike Blum, Ecology's former Project Manager (Attch 1.). Mr. Blum states the program provides a "peace of mind" and showed wells still met drinking water standards although showing some level of contamination, and whether the contaminant level was increasing, decreasing or remaining fairly stable. "The secondary purpose of the program was to provide 'scientific data' to be used by us government officials to track the plumes."

This sampling program has been relatively unchanged for several years and has met the needs of the community. Bruce Austin was first hired by Key Tronic Corp. in the early stages of the site

N. 811 Jefferson Spokane, WA 99260-0180 (509) 456-3600

studies. After the Consent Decree was in place, he was placed on contract with Spokane County to continue the existing program as required by the Consent Decree.

(b) (Chair, Colbert Landfill Contaminant Area Committee) received complaints from residences about the well sampling procedures. (b)(6) addressed these problems in his letter's to the County. It is unfortunate that this matter was not first brought to the attention of the consultant to allow him to respond to the matter. In any case a County representative visited each homeowner to ascertain the facts of each problem. Two main problems were identified, sampling procedures were questionable and of great concern was the one case of a sample appearing to have been taken where no water was available. The County presented these problems to the consultant for further investigation. The consultant responded with a report (Attch. 2),as a result, the County requested that the field sampler may no longer work with County projects, and that Mr. Austin develop a more detailed field data sheet. Mr. Austin and (b)(6) gathered well data and prepared field data sheets for each well. These logs allow the sampler to immediately identify the requirements for sampling each well.

Although the community still has reservations about the program, they do agree with our solution and will continue to monitor the success. The County is confident in our consultants ability to continue this viable program. A review of past well analysis shows no evidence that the domestic well monitoring program has been compromised.

In response to EPA's and Ecology's requests to resolve QA/QC issues Spokane County offers the following:

1. This program is a carry over of a sampling program that has been in existence for several years, and has not required the same stringent requirements of current Superfund laws. As stated, this program is outside the ongoing remedial investigation and is a public relations effort for the community. Any attempt to upgrade the level of effort provided will greatly escalate the cost of such service, and require a renegotiation of the Consent Decree. At present there is no QA\QC plan, but it is possible to extract information from the existing Landau Quality Assurance Project Plan. An appropriate document can be developed that establishes guidelines for the sampling procedures.

2. An existing 1990 sampling program is included in Attch 3.

3. A schedule to provide a QAPP and SAP will be sent to the agencies within two weeks after receiving agency comments. The County has taken corrective measures to resolve the identified problems in the Domestic Well Monitoring program. The County has discussed the option to restructure the existing Colbert Water

Sampling Committee with the agencies. With the resignation of George Britton and the concerns over the sampling program it seems appropriate to make some changes. The County recommends to install one representative from the County, Ecology, and the Citizens Committee to comprise the committee. In a discussion with Neil Thompson, EPA would not be interested in supplying a representative, but might designate a technical advisor to assist in the first few meetings to establish the goals and responsibilities of the new committee. As this committee is responsible for the oversight of the Domestic Well Monitoring program it provides an opportunity to install new confidence in the program.

proces not tech.

If you have any questions concerning this matter please call myself or Dean Fowler.

Sincerely,

for William McDonald

Dennis M. Scott, P.E., Director
Spokane County Public Works

CC: David Jansen
Ecology

CHRISTINE O. GREGOIRE
Director

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
Mail Stop PV-11 • Olympia, Washington 98504-8711 • (206) 459-6000

October 26, 1989

Mr. Dean Fowler
Colbert Landfill Project Manager
Spokane County Public Works
N. 811 Jefferson Street
Spokane, Washington 99260-0180

Re: Domestic Well Monitoring Program

Dear Dean:

This letter is to let you know what is required regarding the domestic well monitoring program. This monitoring program, which was set up a couple years ago, had a two fold purpose. The primary purpose of the program was to provide solid data to the area residents that their well water was still safe to drink. That data provided a lot of "peace of mind" to the Colbert residents. It was especially important for the people whose wells showed some level of contamination, but still met drinking water standards. It let them know what the contamination levels were, and whether the levels were increasing, decreasing, or remaining fairly stable. For those residents whose wells were near the edge of the contamination plume but were not affected, it let them know that their water supply was still free of contaminants. The secondary purpose of the program was to provide "scientific data" to be used by us government officials to track the plumes. The data has been used recently by Landau Associates to develop the new plume maps.

Section VII of the Scope of Work (Domestic Well Monitoring) outlines the requirements of the program. That section states:

1. The domestic well monitoring program is a continuation of the existing program currently being accomplished.

2. The program is carried out under the review of the sampling committee (Britton, (b) (6) , and Austin).

3. Changes will not be made without approval of the sampling committee and the County.

4. Any changes to the program will be submitted to Ecology and EPA for review and approval.

I have attached Section VII of the Scope of Work to this letter.

There is concern among the Colbert area residents that the domestic well monitoring program will be greatly curtailed in the immediate future, due to the installation of new ground water monitoring wells. The purpose of the new monitoring wells is to guide the location of the extraction well systems and was not intended to replace the domestic well monitoring program. Ecology and EPA expect the domestic well monitoring program to remain basically the same until changes are appropriate. Now is not the appropriate time to change that program. Providing the residents with quality and timely data regarding their drinking water will help to satisfy their "peace of mind" and will also go a very long way to making all our work in the area much easier.

If you have any questions, please give me a call at (206)438-3043 or Scan 585-3043.

Sincerely,

Mike Blum

Mike Blum, Project Manager
Landfill Site Cleanup Section
Hazardous Waste Investigations
and Cleanup Program

MB:clr

Enclosure

cc: Bruce Austin, A&A Properties (Sampling Committee Member)
George Britton, Spokane County Assessor (Sampling Committee Member)
(b)(6), Colbert Citizen (Sampling Committee Member)
Neil Thompson, EPA
(b)(6), Colbert Landfill Area Contaminant Committee Chairman

A & A PROPERTIES
P.O. BOX 222
NEWMAN LAKE, WA. 99025

MARCH 12, 1990

DEAN FOWLER
COLBERT LANDFILL PROJECT MANAGER
N. 811 JEFFERSON
SPOKANE, WA. 99260

DEAR DEAN,

THIS IS TO FOLLOW UP ON OUR CONVERSATION OF MARCH 8,1990 ABOUT THE SAMPLING AT COLBERT. ON THE 2ND OF MARCH I CONTACTED (b) (6) AND HE RELAYED TO ME THE SAME INFORMATION THAT BILL WEDLAKE HAD PREVIOUSLY STATED. WEDNESDAY THE 7TH I FINALLY WAS ABLE TO MEET WITH STEVE MAYER AND DISCUSS THE CONFLICT BETWEEN THE FIELD SHEET AND THE INFORMATION OF (b) (6). THE ENCLOSED INCIDENT REPORT SUMMARIZES MY FINDINGS.

THE MARCH TESTING HAD ALREADY BEEN COMPLETED WHEN THIS INVESTIGATION BEGAN. I HAVE REQUESTED THAT 4 WELLS BE RESAMPLED AND TESTED USING PROPER SAMPLE TAKING AND PURGE VOLUME VALUES. THE WELLS ARE THOSE WITH KNOWN PURGE VOLUMES THAT ARE BETWEEN 150 - 400 GALLONS. THIS SHOULD GIVE SOME INDICATION OF THE PURGE VOLUME TO CONTAMINANT LEVEL CORRELATION WHICH THE PREVIOUS 4 MONTHS OF SAMPLING MAY HAVE TAINTED.

THE FIELD SHEET ARE BEING UPDATED TO INDICATE WELL CASING SIZE, WATER VOLUME IN WELL AND PRESSURE TANK SIZE. WHEN THIS INFORMATION IS KNOWN A PURGE VOLUME WILL BE GIVEN ON THE SHEET.

I BELIEVE THAT A LETTER SHOULD BE SENT TO THE WELL OWNERS THAT STATES WHO TO CONTACT IF THEY HAVE ANY COMMENTS ABOUT THE SAMPLING OF THEIR WELL AND ASK FOR AN OPINION ON THEIR EXPERIENCE WITH THE SAMPLERS TO DETERMINE THE EXTENT OF CONFIDENCE REBUILDING NECESSARY. THE PROCESS WOULD BE IN ADDITION TO THE DOOR HANGERS CURRENTLY BEING LEFT AT EACH SAMPLING.

I WILL LOOK FORWARD TO MEETING WITH YOU, MEL AND (b) (6) ON THURSDAY TO BRING THIS MATTER TO A CONCLUSION.

SINCERELY,

BRUCE G. AUSTIN

INCIDENT REPORT: (b) (6) WELL SAMPLING OCTOBER 9, 1989

THESE ARE THE FACTS AS I HAVE BEEN ABLE TO DETERMINE THEM FROM CONVERSATIONS WITH (b) (6), (b) (6) AND MEL WILSON.

ON OCTOBER 9, 1989 A SAMPLE WAS TAKEN FROM THE SPRINKLER MANIFOLD STRAINER BIB BY STEVE MAYER AND SCOTT RALPH. A SMALL QUANTITY OF WATER HAD REMAINED IN THE SYSTEM DURING THE BLOWING OUT PROCESS THAT (b) (6) HAD BEGUN ON THE FIRST OF OCTOBER. (b) (6) USES A COMPRESSOR TO EVACUATE THE LINES IN HIS OUTSIDE WATERING SYSTEM AND THIS WAS PHASED OVER A PERIOD OF A WEEK OR SO. A COMPRESSOR PART HAD FAILED THE DAY BEFORE AND (b) WAS GETTING THE PART IN TOWN AT THE TIME THE SAMPLE WAS TAKEN.

STEVE MAYER TOOK THE SAMPLE WITH THE TEFLON TUBING USED ON ALL SAMPLING. SCOTT RALPH, A COLLEGE GRADUATE WHO WAS BEING TRAINED TO ASSIST STEVE, WAS DOING THE PAPERWORK A THAT TIME. THE SAMPLE WAS TURNED INTO THE LAB ON THE 12TH BY RALPH AND RECEIPTED BY BILL BURKHARDT. THE PAPERWORK DID NOT REFLECT THE ACTUAL SAMPLING VOLUME NOR DID IT INDICATE THAT ANYTHING UNUSUAL HAD HAPPENED.

ON FEBRUARY 7TH WHEN THE (b) (6) WELL WAS SAMPLED, (b) (6) ASKED STEVE ABOUT THE OCTOBER SAMPLING. STEVE'S RESPONSE WAS THAT HE WAS ONLY ABLE TO GET A GALLON OR SO OUT OF THE SAMPLING POINT.

AFTER MEETING WITH DEAN FOWLER, BILL WEDLAKE, AND MEL WILSON ON FEB.28TH, AND AGAIN WITH DEAN & BILL ON MARCH 2ND,I MET WITH (b) (6). HE REVIEWED ALL OF HIS DATA WITH ME TO CONFIRM THAT THE SPRINKLER MANIFOLD COULD NOT HAVE HAD MUCH, IF ANY WATER. ON MARCH 7TH I MET WITH STEVE MAYER AND REVIEWED THE CONVERSATION WITH (b) AND THE DOCUMENTATION SUBMITTED. STEVE DID NOT DENY THE ACCURACY OF (b) (6) STATEMENTS ABOUT THE PUMP VOLUME, IN FACT HIS CONVERSATION WITH (b) IN FEB. CONFIRMED THAT ONLY A SMALL AMOUNT OF WATER WAS AVAILABLE. IT WAS LATER REVEALED THAT SCOTT RALPH HAD RECORDED THE DATA AND THE SCREW-UP HAD NOT BEEN CAUGHT BY STEVE OR MEL WILSON.

CONCLUSION: I BELIEVE THAT THE OBVIOUS CONCLUSION OF MURPHY'S LAW HAS BEEN FULFILLED, THAT EVERYTHING THAT COULD GO WRONG DID GO WRONG. IN MY OPINION NO INTENTIONAL FRAUD OR RECORD DISTORTION WAS INTENDED. THE LACK OF PERSONAL SUPERVISION OF THE TRAINING BY MEL WILSON HAD A MAJOR IMPACT ON THE SAMPLING QUALITY DURING THE FALL OF 1989. WHEN THE VOLUME OF WATER IN A WELL WAS UNKNOWN, THE UNDERSTANDING OF THE SAMPLING PROTOCOL WAS FOR THE PURGING OF SUFFICIENT WATER TO CONFIRM THE FRESHNESS OF THE WATER BY USING THE CONDUCTIVITY METHOD OF STABILIZING THE SAMPLE READING PRIOR TO DRAWING OF A SAMPLE. IN THIS CASE, THIS CRITERIA WAS NOT MET AND THE SAMPLE WAS NOT IDENTIFIED AS NOT MEETING THE STANDARDS. I BELIEVE THAT I ALSO SHARE IN SOME OF THE RESPONSIBILITY FOR THIS PROBLEM. I COULD HAVE DONE A FIELD AUDIT OF THE WORK WHICH MAY HAVE CAUGHT THE PROBLEM EARLIER.

CORRECTIVE ACTION RECOMMENDED:

1.) MEL WILSON NEED TO PROVIDE US WITH A TRAINING AND SUPERVISION PLAN FOR FIELD SAMPLERS AND AN AUDIT PROTOCOL FOR PERIODIC REVIEW, TO ASSURE THE COMPLETENESS AND ACCURACY OF THE FIELD SHEETS.

2.) A FOCUSED EFFORT SHOULD BE UNDERTAKEN TO DETERMINE THE WELL WATER VOLUME AND PROVIDE A PURGE VOLUME FOR EACH WELL. MEL WILSON NEEDS TO HAVE HOSE BIBS INSTALLED AT POINTS IN THE INDIVIDUAL SYSTEMS PRIOR TO THE PRESSURE TANKS FOR

SAMPLING WHICH WOULD ASSURE THE THREE WELL VOLUME FLOW. THIS MAY BE EITHER A FROST FREE AT THE WELL HEAD WHERE PITLESS WELL EXIST OR A HOSE BIB IN THE WELL VAULT. THIS PROGRAM MUST INCLUDE THE INSTALLATION OF SWL COLLECTION POINTS WHERE USING OUR STANDARD METHODS RESULT IN PROBABLE LOSS OF OUR EQUIPMENT.

3.) THE FIELD SAMPLING SHEETS SHOULD BE MODIFIED TO ELIMINATE THE FIELD CALCULATION OF PURGE VOLUME AND CONFIRMATION OF THE CONTACT OF THE WELL OWNER ACCORDING TO THE OWNERS PREFERENCE.

ENVIRO-TEST WEST
P.O. BOX 18635
SPOKANE, WA. 99028

CLEAN AIR/CLEAN WATER
(509)927-1436 OFFICE
(509)928-8350 FAX

Mr. Dean Fowler:
Colbert Landfill Project Manager
Spokane County Public Works
N. 811 Jefferson Street
Spokane, wa. 99206-0180

RE: Water sampling procedures for the Colbert Landfill Area.
Protocol enclosed

Mr. Fowler:

In (b) (6) recent letter to your office he made reference to, but did not name or in any way substantiate in writing, the problems he says are prevalent in the sampling program being supervised by ENVIRO-TEST WEST of Spokane, Wa.

Dean, we feel that specific complaints from home owners should be put in writing by the home owner and sent to the project co-ordinator, who should then bring these items to my attention at his earliest opportunity. I will then follow up on the problem immediately and see that it is resolved. I will then notify the project co-ordinator in writing of the method used to solve the problem.

We will grant that the sampling person may not be the most articulate, presentable, outgoing person in the Spokane area. However we don't believe that highly interpersonel public relations was one of the preconditions for this job. We believe that our company is paid to draw samples in a timely manner, following the protocols established by previous samplers and updated to meet current specifications. As my employees are paid by the hour we would prefer that they sample and leave as opposed to wasting time and money chatting with well owners.

As far as expertise in sampling is concerned, we would be happy to establish a program with Eastern, or WSU or any other college that has a water management or water quality training program. We would also hire their students or graduates if we could find someone who only needed to work one week per month, and if we can effect a change in the current price per sample to offset the added cost of using such people.

We would like to point out that the County now charges $9.00 dollars for a Bacteria sample and another $60.00 dollars to collect it. Also collecting a Bacteria sample does not require locating, purging, pumping wells that have been shut down, opening, closing, taking static water levels, measuring land surface distance where possible, taking conductivity readings, maintaining chain of custody, controlled temperature range, multiple check samples, travel samples and delivery to laboratory within specific time frames.

Dean, if we are going to be held accountable for charges that are so far based on enuendo and rumor, and made by a few people that feel there may be a problem, but do not have the necessary knowledge to make value judgements on sampling protocols, gallons purged, etc. Then a system should be set in place that will continue to assure that strict guidelines will be followed in sampling and also in handling the complaints registered by home owners in a logical manner, with a paper trail to create accountability for the people who have problems, or for those who create unnecessary time consuming problems.

Quite frankly, after my conversation with (b) (6) by phone last month, (she called me, notes of conversation enclosed). I find it strange that (b) (6) has been the one to write such a letter without at least attempting to call or write Mr. Austin or myself to express his concerns. As to the comment made in the letter from (b) (6) about "witch hunting" and "not being after anyone's job", I feel that the mention of it does confirm intent, otherwise why bring it up.

We also feel that the community has a very sensitive situation in the Colbert area and that although we feel concern for the Colbert residents we can not be seen to have any bias toward them or the County. To this end I have always instructed the samplers to not venture any opinions nor to answer any questions about protocols, policy, or make any statements that would involve either the company or the Spokane County, in any questionable words or actions.

We are not involved in setting standards, nor do we wish to be involved. We are not affiliated with any State, Federal, or County enities, and as such are not subject to conflict of interest and because of the legal problems (law suits on file) we wish to maintain this posture.

We also feel that the home owners (all of them) should be polled by the project co-ordinator as to their feelings about the sampling crew and company etc. They should be allowed to voice their concerns as well as their approval and ENVIRO-TEST WEST will be responsive to their wishes as long as it does not make our job more costly, without just compensation for increased cost factors.

We believe there is a lot of smoke being blown by a few people, however we also feel that these people should use the system established for them to address these issues. Mainly by contacting the project co-ordinator in writing and allow him to due his job without interference.

Dean, I would like to offer a solution to some of the sampling problems discribed by (b) (6) . As the Colbert Landfill Site has been declared to be a Superfund site and as this program has been projected to last 10 to 20 years I feel we should establish a more uniform sampling site for all the wells that need to be sampled. ie.

(1). Clearly mark each well location.
(2). Clearly mark each sample location.
  (a). Establish a permanent frost free sampling bib (locked) between well and any pressure tanks or other outlets.
  (b). Establish wells ability to support (3) volume pumping.
    (1). Volume pumping requires a knowledge of.
      (a). Well depth.
      (b). Pump depth.
      (c). Casing size and capacity.
      (d). Static water level.
      (e). Gallons per minute flow rate at sampling site.
        (or)
    (2). Specify use of conductivity meter to establish sampling time.
      (a). Conductivity testing requires that the well be tested, then pumped for 10 minutes or for approximately 200 gallons and then to be retested until (3) consecutive conductivity readings are found and recorded before samples are taken.
(3). Static water levels need to be established for all wells and wells need to be plumbed to allow probe to be safely inserted and retreived. (Plastic pipe installed in casing to pump depth).
(4). No system should be allowed to shut down for winter without provision for sampling team to have access. ie.(Frost free bib installed).

Dean, Hopefully when this is resolved everyone will have a better understanding of the special problems and offer some inovatative solutions to the Colbert Landfill situation.

Respectfully:

ENVIRO-TEST WEST

MELVIN E. WILSON
PRESIDENT

ENVIRO-TEST WEST

PROTOCOL FOR COLBERT LANDFILL PROJECT SAMPLING

STEP 1. CHECK DATA: (WITH OWNER OR RENTER IF POSSIBLE)
- CONFIRM OWNER
- ADDRESS
- PHONE
- IF RENTAL: CONFIRM NAME OF RENTER

STEP 2. CHECK SPECIAL INFORMATION SECTION:
- INSTRUCTIONS
- TOOLS REQUIRED
- PUMP REQUIRED

STEP 3. OPEN SYSTEM: (DO NOT START PUMPING)
- ESTABLISH WELL HEAD MEASUREMENTS
  - (a). LAND SURFACE DISTANCE. (SEE FIGURE 1)
  - (b). STATIC WATER LEVEL.
    - (1). CLEAN 10FT OF PROBE WITH DISTILLED H2O
    - (2). CHECK DATA SHEET FOR APPROXIMATE H2O DEPTH. INSERT PROBE AND UNREEL TO H2O RECORD TIME AND SWL READING.

STEP 4. START PUMPING:
- RECORD TIME AND APPROXIMATE GALLONS PER MINUTE FLOW AT SAMPLE SITE.

STEP 5. CONDUCTIVITY READING:
- TAKE 1 GALLON PAIL AND RUN H2O CONTINUOUSLY INTO PAIL TAKE ONE (1) CONDUCTIVITY READING AND RECORD TIME AND READING.

STEP 6. ESTABLISH SYSTEM CONFIGURATION:
- (EXAMPLE) WELL)=SAMPLE BIB)=PRESSURE TANK)=HOUSE

STEP 7. CONDUCTIVITY READINGS:
- AFTER 10 MINUTES OR APPROXIMATELY 200 GALLONS OF H2O HAS BEEN PURGED OR THREE (3) WELL VOLUMES HAVE BEEN PURGED, (WHICHEVER OF THESE ITEMS ARE APPROPRIATE FOR THE SYSTEM YOU ARE SAMPLING). START CONSECUTIVE CONDUCTIVITY READINGS UNTIL YOU HAVE THREE (3) READINGS WHICH ARE THE SAME. RECORD ALL CONDUCTIVITY READINGS AND TIMES.

STEP 8. STATIC WATER LEVEL READING:
- RETAKE SWL READING TO ESTABLISH PUMP DRAW DOWN, RECORD READING AND TIME.

STEP 9. WATER SAMPLE:

ESTABLISH LOCATION SAMPLE BEING PULLED. (ie) FROST FREE YARD HYDRANT SOUTH SIDE OF WELL VAULT.

INSTALL STERILE SAMPLING TUBE.

(a). PULL TWO (2) AIRFREE SAMPLES.

(b). LABLE AS FOLLOWS: (EXAMPLE)

(1).	NAME:	DOE, JOHN
(2).	SAMPLING NUMBER:	1573C-14
(3).	TIME/DATE	10:15/7/1/88
(4).	SAMPLERS NUMBER	1

(c). PUT SAMPLES IN COLLECTION CONTAINER WITH TRAVEL BLANKS.

STEP 10. CLOSE SYSTEM:

BE SURE TO RETURN SYSTEM TO EXACT CONDITION YOU FOUND IT IN.

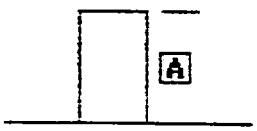
(a). RECORD ANY SYSTEM PROBLEMS. (ie) LEAKS, STANDING WATER, INFESTATIONS, ETC.

NOTIFY OWNER OF PROBLEMS IF POSSIBLE

PLACE DOOR HANGER AS DIRECTED BY B. AUSTIN 2/5/90

FIGURE 1

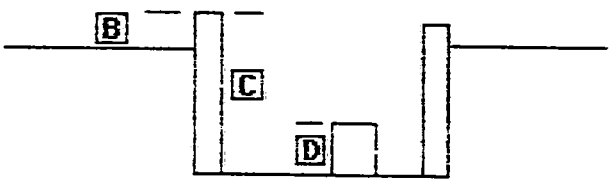
PITLESS SYSTEM



MEASURE GROUND TO TOP OF CASING

FIGURE A

WELL VAULT



MEASURE GROUND TO TOP OF VAULT

FIGURE B

MEASURE GROUND TO TOP OF VAULT

FIGURE C

MEASURE GROUND TO TOP OF CASING

FIGURE D

1989 - 1990 SAMPLING PLAN
APPROVED BY SAMPLING SUBCOMMITTEE 11/2/89

WELL #	NAME	ZONE	WWD	CONTAM	TEST/YEAR	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
1073B-2	BN (N)	1	N	Y	2					X				X			
0273C-7	(b) (6)	1	N	N	1			X									
0273P-3		1	N	Y	3				X			X					X
3C-3		1	N	N	2						X						X
0273Q-1		1	N	N	1							X					
0373P-1S	(b) (6) SPRINGS	1	Y	Y	1								X				
0373A-3	(b) (6)	1	Y	N	1							X					
0273N-8		1	Y	Y	1	NO ACCESS											
0273F-4		1	N	N	2	X							X				
0273P-1		1	Y	Y	1									X			
0273C-4		1	N	N	2				X						X		
0273N-7		1	Y	Y	1											X	
0373L-1S	STERLING SPRINGS	1	N	Y	4		X			X			X				X
0273C-1	(b) (6)	1	N	N	2	X							X				

WELL #	NAME	ZONE	WWD	CONTAM	TEST/YEAR	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
0373A-1	(b) (6)	2	N	N	3	X				X				X			
0273L-1		2	Y	Y	1	NO ACCESS										X	
0373J-1		2	Y	Y	0												
0273P-5		2	Y	Y	1						X						
0273D-1		2	N	N	3		X				X					X	
0273F-2		2	N	N	2					X							X
0273P-4		2	N	N	1								X				
0273F-3		2	Y	N	1												X
0273E-1		2	N	Y	6	X		X		X		X		X			X
1173B-1		2	N	N	2		X							X			
0273C-2		2	Y	N	1								X				
0273L-2		2	Y	Y	1									X			
3M-1		2	Y	Y	1												X
0373J-3		2	Y	Y	1							X					
0273M-7		2	Y	N	1											X	
0273F-1		2	Y	N	1	SPRING '90				X							
0273N-5		2	Y	Y	1												X
0273N-6		2	Y	N	0												
0273C-5		2	N	N	2				X								X
0273E-2		2	N	Y	6		X		X		X		X		X		X
0273C-6		2	Y	N	1										X		
0273D-2		2	N	N	2				X								X
0373A-2		2	N	N	3				X				X				X
0273D-5		2	Y	N	1								X				
0273E-3		2	Y	Y	1									X			
0273L-3		2	Y	N	1								X				
0273M-2		2	Y	Y	1									X			
0373A-4		2	N	N	3		X				X				X		
0273D-6		2	N	N	3	X				X				X			
0373J-5		2	Y	Y	1												X
0373J-4		2	Y	Y	0												
0273D-3		2	N	N	3		X				X				X		

JAN 2 6 1990

1989 - 1990 SAMPLING PLAN

APPROVED BY SAMPLING SUBCOMMITTEE 11/2/89

WELL #	NAME	ZONE	WWD	CONTAM	TEST/YEAR	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
1073C-1	BATTY SPRINGS	3	N	Y	2						X				X		
1073Q-1	(b) (6)	3	Y	Y	1								X				
1573C- 1		3	Y	Y	1										X		
1173Q-1		3	N	N	1									X			
1073F-1	KELLY SPRINGS	3	Y	N	0												
1573B-5	(b) (6)	3	Y	N	4		X			X			X			X	
1473D-2		3	N	N	2				X							X	
1073P-2		3	N	N	3		X				X				X		
1573C- 3		3	N	N	2		X							X			
1573B-4		3	Y	Y	1									X			
1573F-3		3	N	N	0												
1573C- 6		3	N	Y	4		X			X			X			X	
1073Q-2		3	Y	Y	1	NO ACCESS											
1073P-1S	RINGO SPRINGS	3	N	Y	3		X			X						X	
1573B-2	(b) (6)	3	Y	Y	1								X				
1473D-3		3	Y	Y	1		X										
1573C- 2		3	N	N	2					X						X	
1173N-1		3	N	N	2					X							X
1573B-1		3	Y	Y	1											X	
1573C-12		3	N	N	0												
1573C- 7		3	N	Y	4			X			X			X			X
1573B-3		3	Y	Y	1								X				
1573A-1		3	Y	Y	1											X	
1573C- 8		3	N	N	3		X						X			X	
1073Q-3		3	Y	Y	1										X		
1073K-1		3	Y	Y	1						X						

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WELL #	NAME	ZONE	WWD	CONTAM	TEST/YEAR		NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
1573F-1	(b) (6)	4	N	N	2					X						X		
1173L-1		4	Y	Y	1								X					
1173D-1		4	Y	Y	1											X		
3E-1		4	Y	N	1									X				
1073J-1		4	N	N	3	2-3			X			X				X		
1573C-10	(b) (6) (NEW-NORTH)	4	N	N	2					X					X			
1573C- 9	(OLD-SOUTH)	4	N	N	0													
1073G-1		4	N	N	2					X					X			
1473C-4		4	N	N	2			X						X				
1573C-17		4	N	N	2						X						X	
1573C- 5		4	N	N	2				X					X				
1573H-2	(b) (6)	4	N	N	2					X					X			
1573H-3		4	N	N	2		X						X					
1573C-13		4	N	N	2		X					X						
1473C-1		4	N	N	2		X								X			
1073P-3		4	N	N	1											X		
1573A-2	N. MEADOWS (b) (6)	4	N	N	0													
1073Q-4	NORTH MEADOWS (MIDDLE)	4	N	N	3				X				X				X	
1073Q-5	NORTH MEADOWS (WEST)	4	N	N	0													
1573C-11	(b) (6)	4	N	N	2							X					U	
1473C-5		4	N	N	2					X						X		
1573C- 4		4	N	N	2			X					X					
1473D-1		4	N	N	2				X						X			
1573C-15		4	N	N	2				X						X			
1473C-2		4	N	N	2							X						X
1573H-1		4	N	N	2			X						X				
1173F-1		4	Y	Y	0													
1173F-2		4	Y	Y	1										X			
1473C-3		4	N	N	2						X						X	
73C-16		4	N	N	2			X						U				
1073J-2	WAHOO WATER DIST.	4	N	Y	3			X					X				X	
1073L-4	(b) (6)	4	N	N	2						X						X	
1573C-14		4	N	N	2						U							X

WELL #	NAME	ZONE	WWD	CONTAM	TEST/YEAR		NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
1573R-1	(b) (6)	5	N	N	4		X			X			X			X		
1573R-2		5	N	N	3			X				X					X	
2273A-2		5	Y	N	0													
2273F-1		5	N	N	1						X							
1473M-1		5	N	Y	12	8-12	X	X	X	X	X	X	X	X	X	X	X	X
2273J-1		5	N	N	1										X			
2373E-1		5	N	N	1	REVIEW '90										X		
1573M-4		5	N	N	1									X				
1473N-1		5	N	N	6		X		X		X		X		X		X	
1573R-3		5	N	N	2				X						X			
2373M-1		5	N	N	1	REVIEW '90						X						
2373D-1		5	Y	N	1													X
1573Q-1		5	N	N	4			X			X			X			X	
1573K-1		5	N	N	4				X			X			X			X
2273M-1	SUBURBAN HILLTOP	5	N	N	1								X					

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WELL #	NAME	ZONE	WWD	CONTAM	TEST/YEAR		NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
1573K-3	(b) (6)	6	N	N	2					X						X		
2273K-1		6	N	N	1											X		
1573K-2		6	N	N	2		X						X					
2373E-2		6	N	N	1									X				
1573E-3		6	N	N	2			X						X				
1573F-4		6	N	N	2				X						X			
1573F-2		6	N	N	2					X						X		
1573E-2		6	N	N	2						X						X	
2273A-1		6	N	N	2					X						X		

WELL #	NAME	ZONE	WWD	CONTAM	TEST/YEAR		NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
0373P-3	ALLEN SPRINGS	7	Y	N	0													
1073L-3	(b) (6)	7	N	N	1									X				
1573D-1		7	N	N	2			X					X					
1073C-2	BATTY POND	7	N	N	0													
1073M-4	(b) (6)	7	N	N	2					X						X		
1073M-1		7	N	N	2						X					X		
1673A-1		7	N	N	0	REVIEW '90												
1073D-1		7	N	N	4		X			X			X			X		
1073N-1		7	N	N	2						X					X		
1073E-1		7	N	Y	3			X				X				X		
1573E-1		7	N	N	2								X					X
1673H-1		7	N	N	2						X					X		
1673H-3	NEW	7	N	N	0													
1673H-2	S-	7	N	N	0													
1673A-3	GATLIN SPRINGS	7	N	N	0	REVIEW '90												
1673A-2	(b) (6)	7	N	N	1												X	
1073L-1		7	N	N	2		X							X				
1073M-2		7	N	N	2					X					X			
1073M-3		7	N	N	2				X					X				
1073D-2	N. GLEN	7	N	Y	4	4-5		X		X			X			X		
1073E-2	(b) (6)	7	N	Y	4				X			X			X			X
1073L-2		7	N	N	2					X						X		

WELL #	NAME	ZONE	WWD	CONTAM	TEST/YEAR		NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
0173M-1	(b) (6)	8	N	N	0	REVIEW '90												
1273D-1		8	N	N	0	REVIEW '90												
0273R-3		8	N	N	0	REVIEW '90												
2673M-1	COLBERT ELEMENTARY	8	N	N	1											X		
3583P-1	(b) (6)	8	N	N	0	ONE TIME ONLY												
0273J-1		8	N	N	0	REVIEW '90												
1273M-2		8	N	N	0	REVIEW '90												
3583L-1		8	N	N	0	REVIEW '90												
1273N-1		8	N	N	1							X						
1273M-1		8	N	N	1												X	
3473A-1	KELLOGG WELL WWD	8	N	N	0													
0273G-1S	(b) (6)	8	N	N	0													
0273J-2		8	N	N	1						X							
0273R-1		8	N	N	0	REVIEW '90												
3583J-1		8	N	N	0	REVIEW '90												
0273J-3		8	N	N	0	REVIEW '90												
0273R-2		8	N	N	0													